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INFORMATION REPORT

COUNTRY France

SUBJECT Use of Resins, Wire Enamels and Varnishes at  
Société Générale de Constructions Electriques et  
Mécaniques Alsthom, 38 Avenue Kléber, Paris

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Micamat and Samica

1. Samica, the French equivalent of mica paper and micamat, is supplied normally with a boric acid-shellac binder or with a melamine binder. Alsthom, in its application of Samica, generally applies a glyptal varnish impregnation to the mica mat after taping. Alsthom uses substantially no Samica in motor application such as in cone construction or commutators. Alsthom has studied Samica stability in aging tests. Such tests include heat cycles as follows.
2. 110°C heat periods for 45 minutes followed by cooling 30°C and recycling to 119°C for 45 minutes. Such heat cycles have been applied as much as 2000 times to a paper-backed Samica assembly which consisted of taped Samica applied to a long copper bar to a thickness of about 3mm. During the heat cycling the power factor of the Samica measured at 10 KV decreased continuously from about 3% to about 1%. The shrinkage was about .01-.02 (mm?) and the creep along the copper bar was satisfactory.
3. The dielectric strength of the Samica as a function of temperature seemed constant in the range of 29-40 KV/mm. The plan is to use Samica impregnated with an acetyl butyrate-phenol formaldehyde resin blend.
4. Alsthom plans to apply Samica in motor application but is still using split mica with a shellac binder in cones and commutator construction.

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Wire Enamels

5.

In the study of new enamels for wire, there appears to be a partiality towards an enamel which consists of Epon resin (25%) in a china wood oil modified phenolic resin mixture. Wires so enameled are said to be good in high humidity. Soaked in water for three days gave no change in the dielectric properties. The curing temperature is "normal".

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